

Denver. Thunder-storms continued on the 23rd from Nebraska to Mississippi, Louisiana and northern Texas, and on the 24th, 25th, 26th and 27th from Texas to Alabama.

No. XI.—On the 28th, falling barometer in the Upper Missouri valley indicated the approach of this storm, and very light rains were reported from Utah to Nebraska, with a hail-storm below Fort Randall, D. T. At 7:35 a. m., of the 29th, it was probably central over the eastern portions of Wyoming and Montana, with a barometric trough extending eastward over the Lake region. Frequent thunder-storms were reported during the day from Dakota and Montana south and eastward to Texas, Alabama, Illinois and Michigan, with hail in Nebraska, Montana, Dakota, Iowa and Michigan. At Detroit, Mich., severe thunder-storm at 2:45 p. m.; during morning barometer fell steadily; 2 p. m., temperature 82° Fahrenheit, and heat overpowering, notwithstanding a steady west wind of 12 miles per hour; 2:45 p. m., wind suddenly veered from west to north, and in a few moments to northeast, increasing to 20 miles per hour; rain in torrents, flooding streets and basements, and washing away pavements, trees, curbing, &c.; 3:30 p. m., during a period of five minutes, the wind blew at the rate of 35 miles per hour, and some hail fell at the same time. The following hourly wind-velocities were reported: At Duluth, NE., 36, Breckenridge, SE., 29, and Toledo, NE., 42 miles. During the 30th the pressure continued diminishing over the Northwest and Lakes, and, at 11 p. m., an area, enclosed by isobaric curve 29.00 inches, was central in Dakota. Thunder-storms were occasionally reported from thence to Michigan and the Gulf States, with snow and hail in Montana and Utah. The following are some of the highest hourly wind-velocities: Indianola, S., 30, North Platte, SE., 40, Dodge City, E., 43, and Pike's Peak, W., 76 miles. On the 31st the central depression advanced to eastern Dakota, with a barometric trough extending southward over Indian Territory. Frequent and severe thunder-storms prevailed from Dakota, Minnesota and the Upper Lakes to the Gulf States, with hail in Wyoming. At St. Louis, S., 34, Breckenridge, SE., 41, and North Platte, 42 miles per hour were recorded. Cautionary Signals were ordered on the 29th at Duluth, Milwaukee, Chicago and Grand Haven, on the 30th, at Escanaba and Marquette, and on the 31st, as far east as Buffalo, the majority of which were justified. As this storm moved to the eastward it diminished very much in force.

TEMPERATURE OF THE AIR.

The isothermal curves, (in red,) upon chart No. II, illustrate the general distribution of the temperature of the air for the month. Mean temperatures received late and not given on the Chart are: for Fort Benton, 57°; Virginia City, 46.°4; Pike's Peak, 21.°4; Fort Sully, 61.°7; North Platte, 59.°6; Santa Fé, 55.°9; Mt. Washington, 33.°1. By referring to the table in the lower left-hand corner of the same chart, it will be seen that the average is below that for many years in New England, the South Atlantic States, along the Pacific coast, and in the St. Lawrence valley; nearly the same in the Middle Atlantic States, Gulf States and Upper Mississippi valley; above in the Lake region, Ohio valley, Tennessee and Missouri valley. Minimum and maximum temperatures, respectively, for the month, are given for the following stations, viz: Portland, Or., 36°, 82°; San Francisco, 45°, 81°; San Diego, 50°, 76°; Salt Lake City, 33°, 88°; Cheyenne, 27°, 81°; Denver, 32°, 85°; Pike's Peak, 2°, 39°; Santa Fé, 28°, 78°; Virginia City, 24°, 81°; Bismarck, 23°, 87°; Pembina, 22°, 57°; Fort Sully, 27°, 96°; St. Paul, 31°, 89°; Leavenworth, 37°, 87°; Duluth, 26°, 87; Marquette, 23°, 86°; Chicago, 35°, 87°; Detroit, 30°, 85°; Oswego, 31°, 91°; Pittsburgh, 27°, 91°; Memphis, 48°, 88°; New Orleans, 57°, 86°; Indianola, 58°, 87°; Eagle Pass, Texas, 72°, 102°; Key West, 70°, 91°; Savannah, 50°, 94°; Norfolk, 38°, 89°; Knoxville, 40°, 89°; Washington, 34°, 90°; New York, 34°, 83°; Boston, 34°, 86°; Eastport, 33°, 65°; Mt. Washington, 7°, 55°.

Ranges in Temperature.—The greatest ranges, from 61° to 69° Fahrenheit, are reported from western Pennsylvania to Minnesota and Dakota; the least ranges, 21° to 30°, from southern Florida to Texas, 26° at San Diego, and 32° at Eastport and Wood's Hole.

Frosts and ice, destructive to fruits and early vegetables, are reported as follows, viz: on the 1st, ice formed $\frac{1}{2}$ inch thick at Elmira, Ill., Atco, N. J., and West Chester, Pa.; at Ringgold, O., cherry, plum and apple trees, and at Morgantown, cherry, peach and plum trees, were injured by freezing; 2nd, 6th and 19th, at Santa Fé, tender vegetables damaged; 3rd, at La Grange, Tenn., (latest frost known,) fruit all killed, except cherries and grapes, at Corsicana, vegetation slightly damaged, and at Muscatine, Iowa, sweet potatoes and tomatoes killed; 15th, ice formed at Salt Lake City; 16th, asparagus frozen at Gardiner, Me.; 16th and 17th, at San Jose, Cal., grapes injured; 17th, a frost damaging vegetation at Carson City, Nev., and at New London, ice formed $\frac{1}{2}$ inch thick; 18th, at Kanab, Utah, peaches, apples, grapes, &c., killed—ice $\frac{1}{2}$ inch thick; 21st, potato vines killed at Viejas, Cal.; 23rd, Malone, N. Y., vegetables killed; 31st, squash vines killed at Plaistow, N. H. At Fayette, Miss., first May frosts for years on 3rd and 9th.

PRECIPITATION.

Upon chart No. III is represented the distribution of rain-fall and melted snow. The following figures were received after the printing of the chart, viz: Virginia City, 5.58; Pike's Peak, 4.73; Santa Fé, 0.83;